300N Draft 802.11n Wireless PCI Adapter

Model # AWLH6080

User's Manual

Rev. 1.0

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1. Introduction

Congratulations on your purchase of the 300N Draft 802.11n Wireless PCI Adapter. The 300N PCI Adapter provides wireless data rate of up to 300 Mbps* when used with other AirLink101® 300N wireless products. The high bandwidth combined with extended wireless coverage delivers fast and reliable connection for all of your networking applications.

A full range of security features such as WEP, WPA-PSK, and WPA2-PSK provide the highest level of wireless network security. The bundled Wireless Utility allows you to set up the adapter with an easy-to-use user interface. Best of all the 300N PCI Adapter works with 802.11g and 802.11b network devices ensuring compatibility with your existing wireless products.

1.1 Package Contents

Before you begin the installation, please check the items of your package. The package should include the following items:

- Wireless PCI Adapter
- Antenna
- Quick Installation Guide
- Installation CD (Driver/Utility/Manual)

1.2 Features

- Industry's highest wireless data rate of up to 300 Mbps* with IEEE 802.11n draft specification version 1.0.
- 3 antennas for wider coverage and continuous connectivity eliminates dead spots
- 64-bit/128-bit WEP encryption, Pre-shared Key (PSK), and Wi-Fi Protected Access (WPA2) and WPA support provide full protection for your wireless connection
- Higher data rate increases the reliability and stability of wireless connections
- Great for environments with higher wireless data traffic requirements
- Fully backward-compatible with 802.11b/g devices
- Works best with AirLink101® 300N wireless router AR680W

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2. Installation

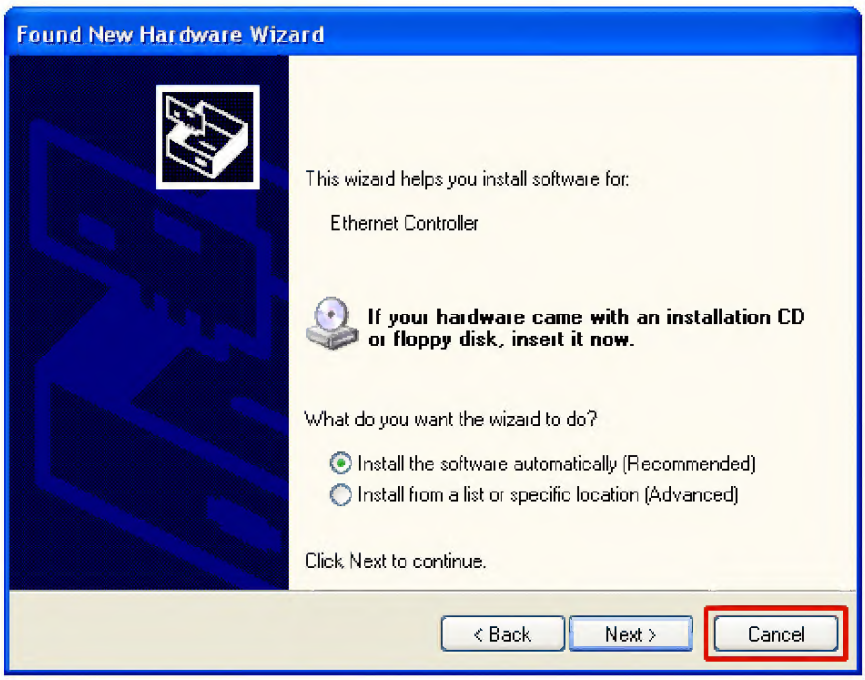
2.1 Install Driver & Utility

This section provides instructions on how to install the **300N Draft 802.11n Wireless PCI Adapter**. The driver is installed along with the utility.

Note: *Be sure to power off your computer before inserting the Cardbus adapter.*

Step 1 Insert the PCI adapter into an available PCI slot and turn on your computer.

Step 2 After turning on the computer, Windows will launch the **Found New Hardware Wizard**. The Found New Hardware Wizard appears differently depending on your operating system. Click **Cancel** to quit the wizard and insert the Installation CD into your CD drive.


Found New Hardware Wizard
This wizard helps you install software for:
Ethernet Controller
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Step 3 The Autorun screen will pop up. Select **Install Utility and Driver** from the menu.

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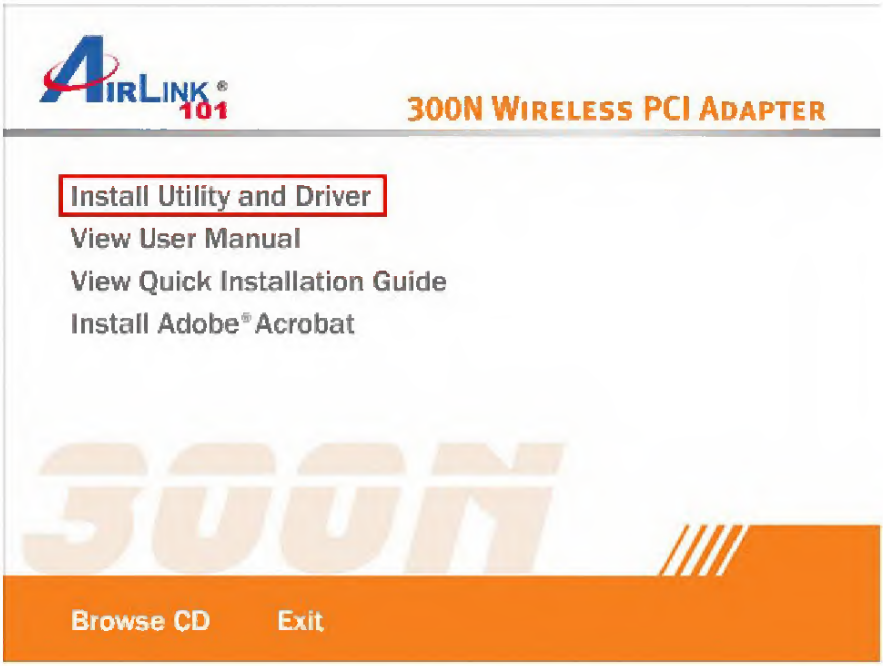
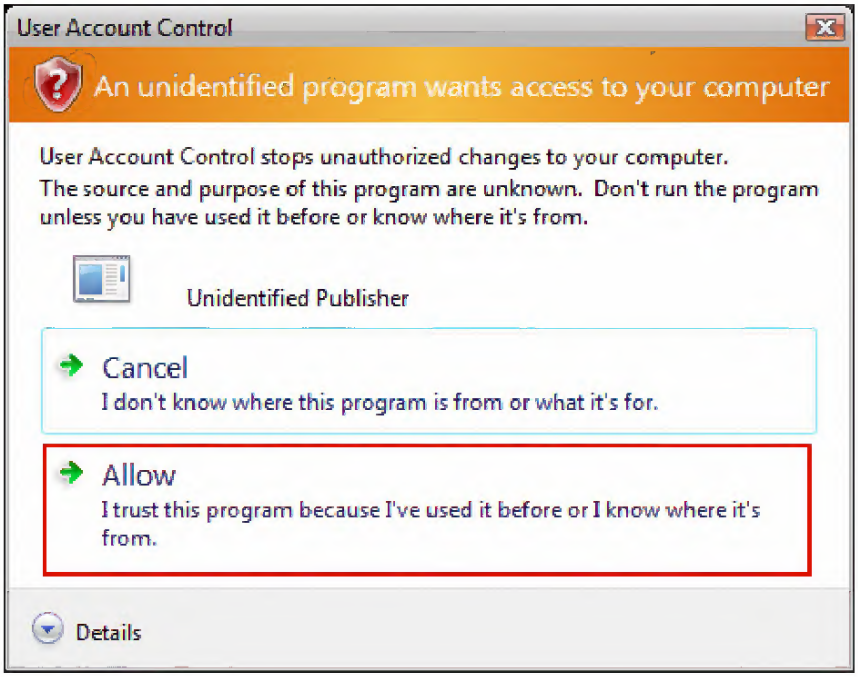


Note: *If the Autorun screen doesn't appear automatically, or if you get a blank white screen, go to* ***Start***, ***Run***, *and type* ***D:\Utility\Setup.exe*** *(where* ***D*** *is the letter of your CD drive) and click* ***OK***.

Windows Vista users*:* At this point, you may get a warning message like the one below. Make sure that you click **Allow** to continue with the installation.


User Account Control
An unidentified program wants access to your computer
User Account Control stops unauthorized changes to your computer.
The source and purpose of this program are unknown. Don't run the program unless you have used it before or know where it's from.
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program because I've used it before or I know where it's from.
Details

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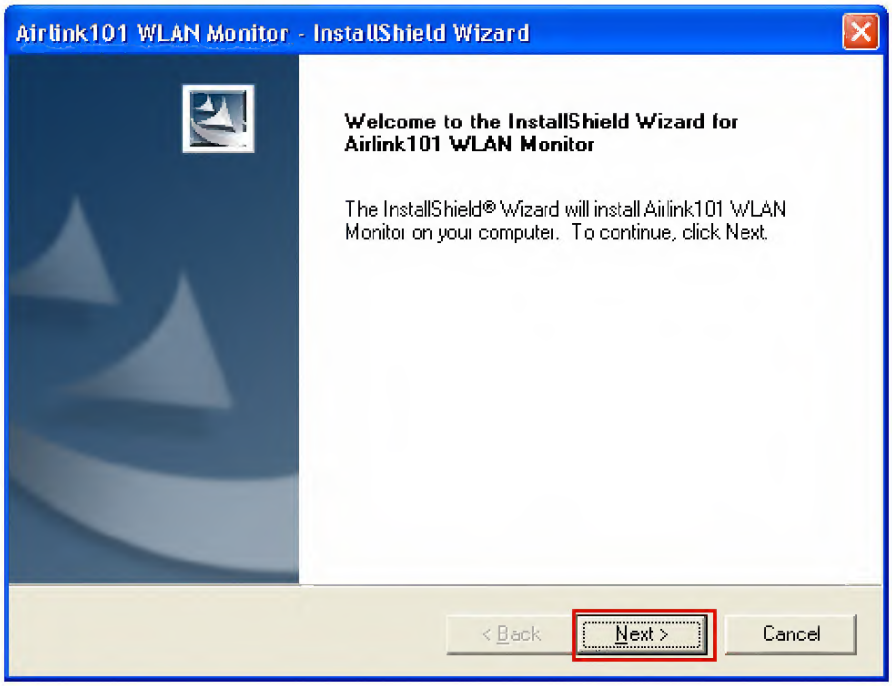
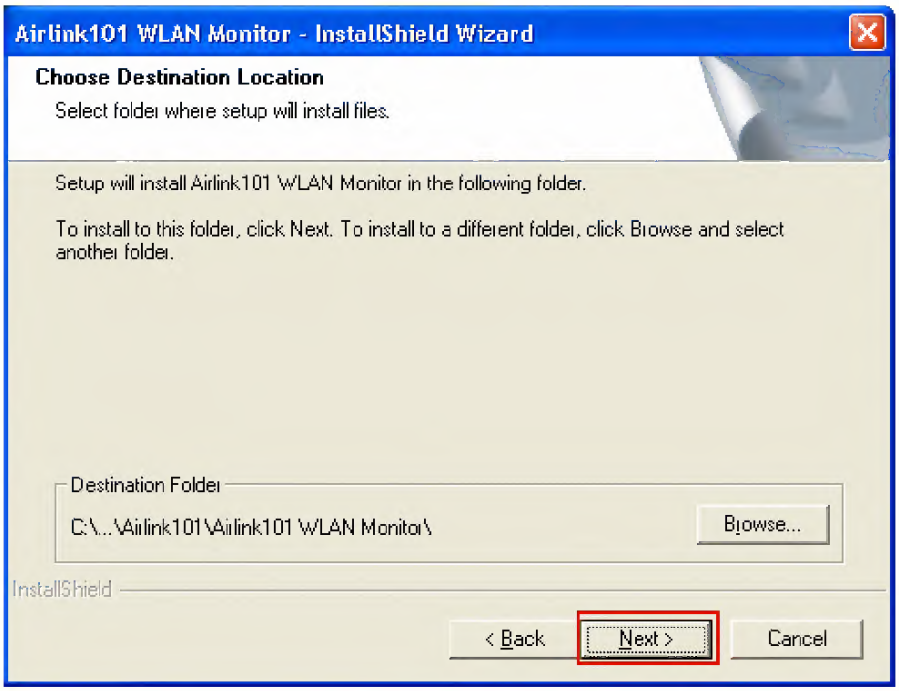
Step 4 Click **Next** at the welcome screen.


Airlink101 WLAN Monitor - InstallShield Wizard
Welcome to the InstallShield Wizard for Airlink101 WLAN Monitor
The InstallShield® Wizard will install Airlink101 WLAN Monitor on your computer. To continue, click Next.
< Back
Next >
Cancel

Step 5 Click **Next** to accept the default destination folder.


Airlink101 WLAN Monitor - InstallShield Wizard
Choose Destination Location
Select folder where setup will install files.
Setup will install Airlink101 WLAN Monitor in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\...\Airlink101\Airlink101 WLAN Monitor\
Browse...
InstallShield
< Back
Next >
Cancel

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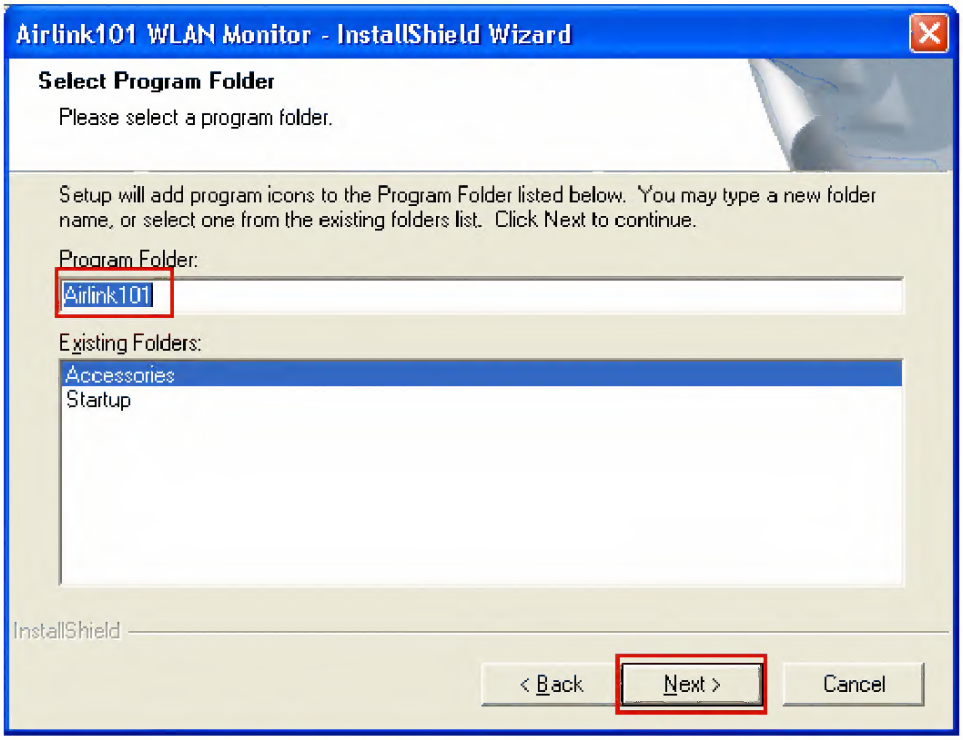
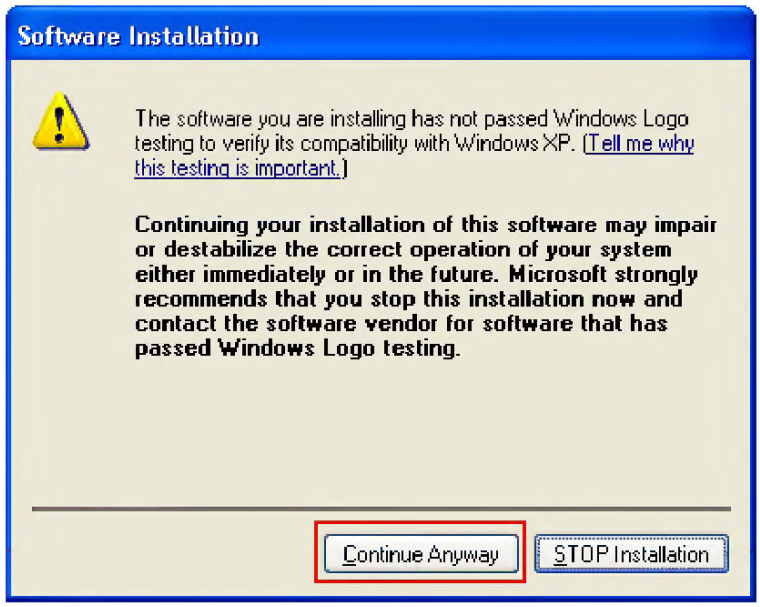

Airlink101 WLAN Monitor - InstallShield Wizard
Select Program Folder
Please select a program folder.
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.
Program Folder:
Airlink101
Existing Folders:
Accessories
Startup
InstallShield
< Back
Next >
Cancel

Step 6 Click **Continue Anyway** at the Windows Logo Screen. (For Windows 2000, click **Yes** at the Digital Signature Not Found prompt).


Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

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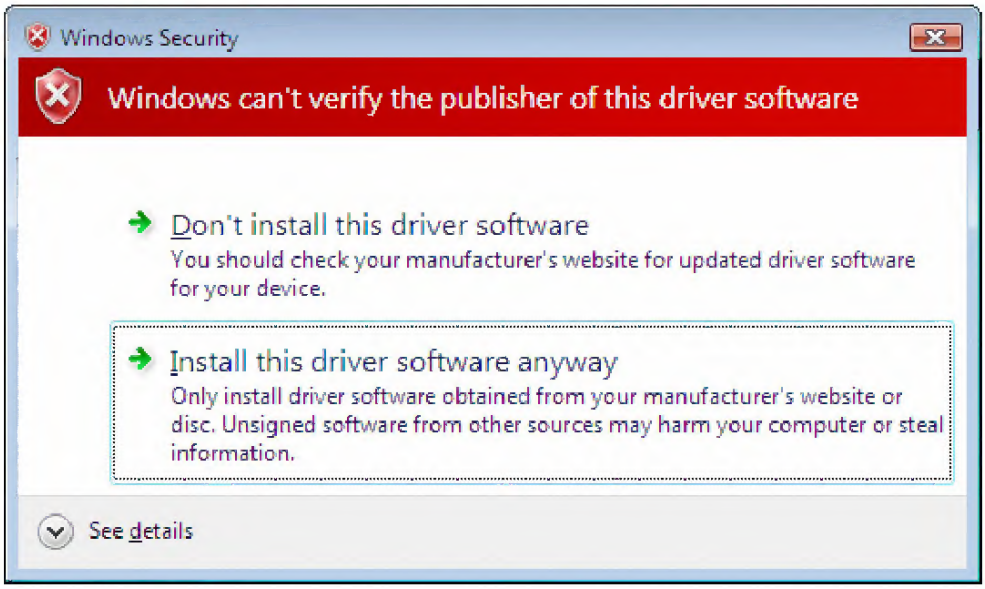
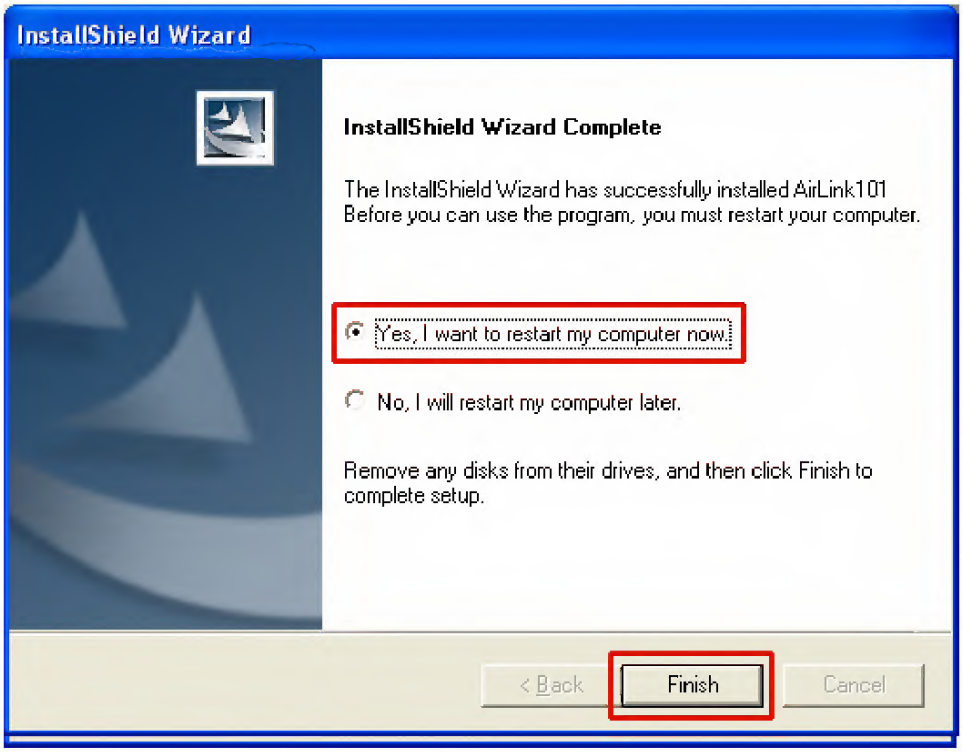
For Windows Vista, click the **Install this driver software anyway** button when the security warning appears.


Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details

Step 7 Click **Yes, I want to restart my computer now** and then **Finish** to restart your computer.


InstallShield Wizard
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed AirLink101. Before you can use the program, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

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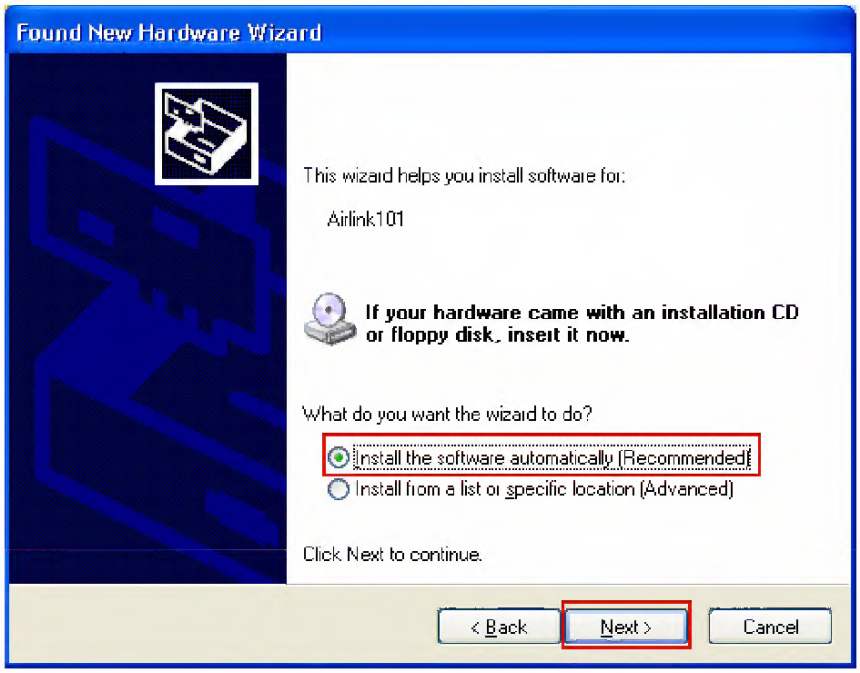
Step 8 After the computer is restarted, Windows will ask to connect to Windows Update, select **No, not this time** and click **Next**. If this screen does not appear, you can skip to section 2.2.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

Step 9 Select **Install the software automatically** and click **Next**.


Found New Hardware Wizard
This wizard helps you install software for:
Airlink101
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

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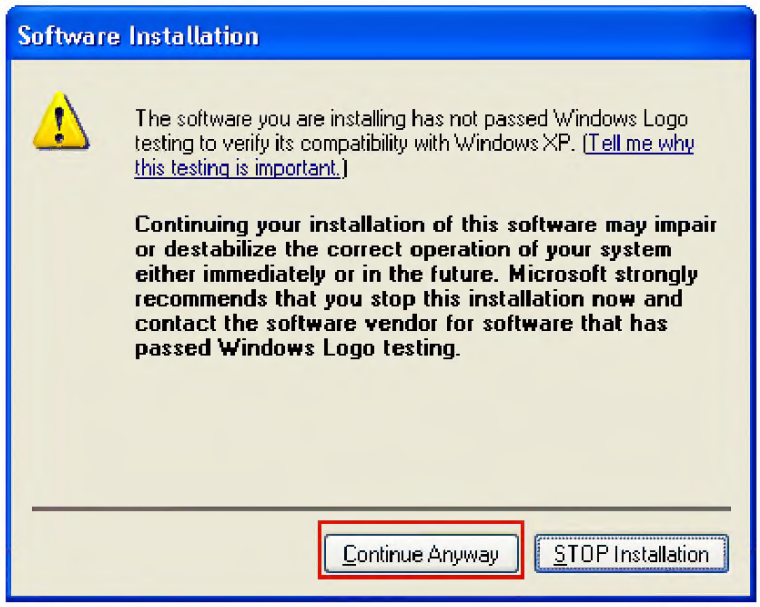
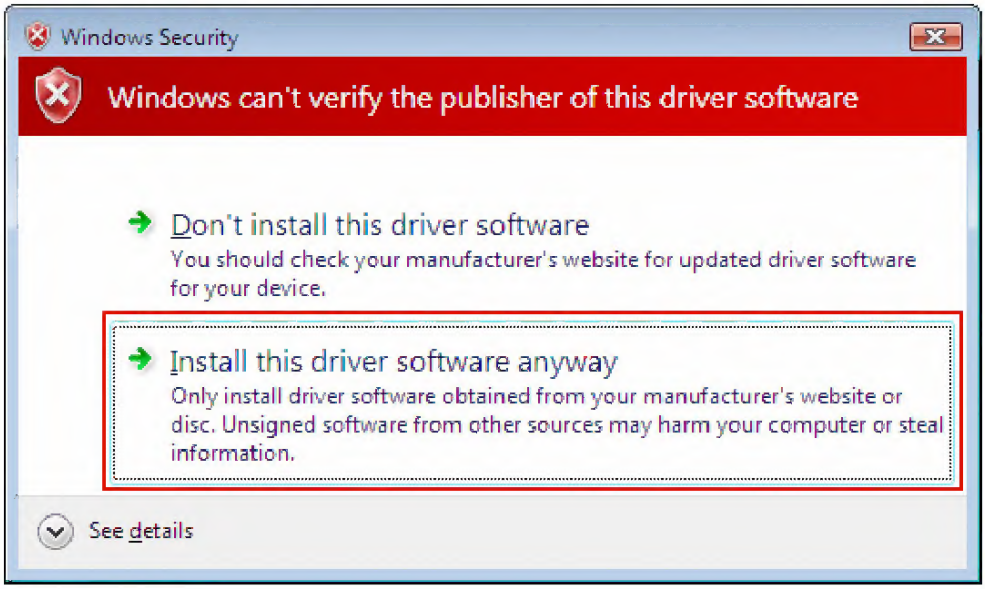
Step 10 Click **Continue Anyway** at the Windows Logo Screen.
(For Windows 2000, click **Yes** at the Digital Signature Not Found prompt).


Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

For Windows Vista, click the **Install this driver software anyway** button when the security warning appears.


Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details

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Step 11 Click **Finish.**

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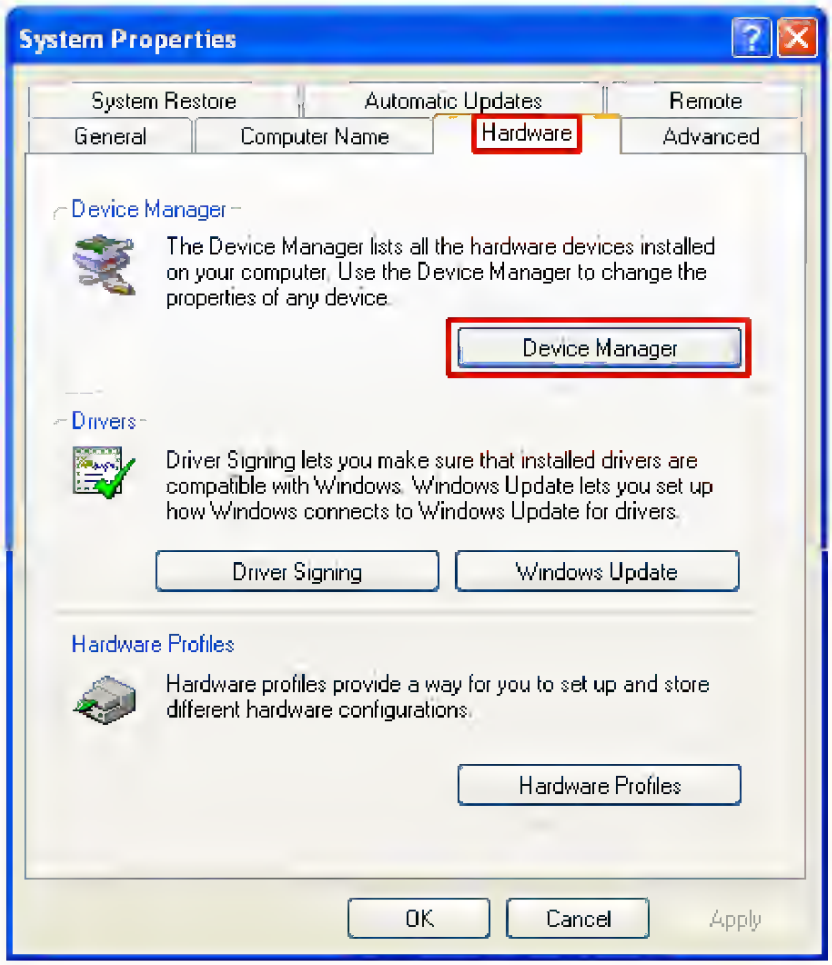
2.2 Verify Driver Installation

To verify if the driver has been installed successfully, please perform the following steps.

Step 1 Right-click on **My Computer** from your desktop and select **Properties**.

Step 2 If you are using Windows XP/2000 select the **Hardware tab**, then click on **Device Manager**.


System Properties
System Restore
Automatic Updates
Remote
General
Computer Name
Hardware
Advanced
Device Manager
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.
Device Manager
Drivers
Driver Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers.
Driver Signing
Windows Update
Hardware Profiles
Hardware profiles provide a way for you to set up and store different hardware configurations.
Hardware Profiles
OK
Cancel
Apply

If you are using **Windows Vista**, click on the device manager link on the left side of the screen.

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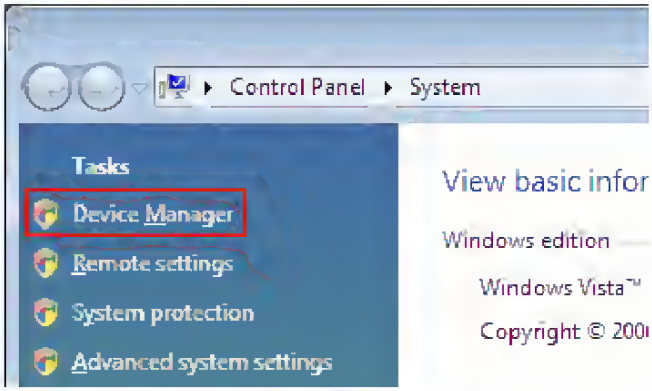
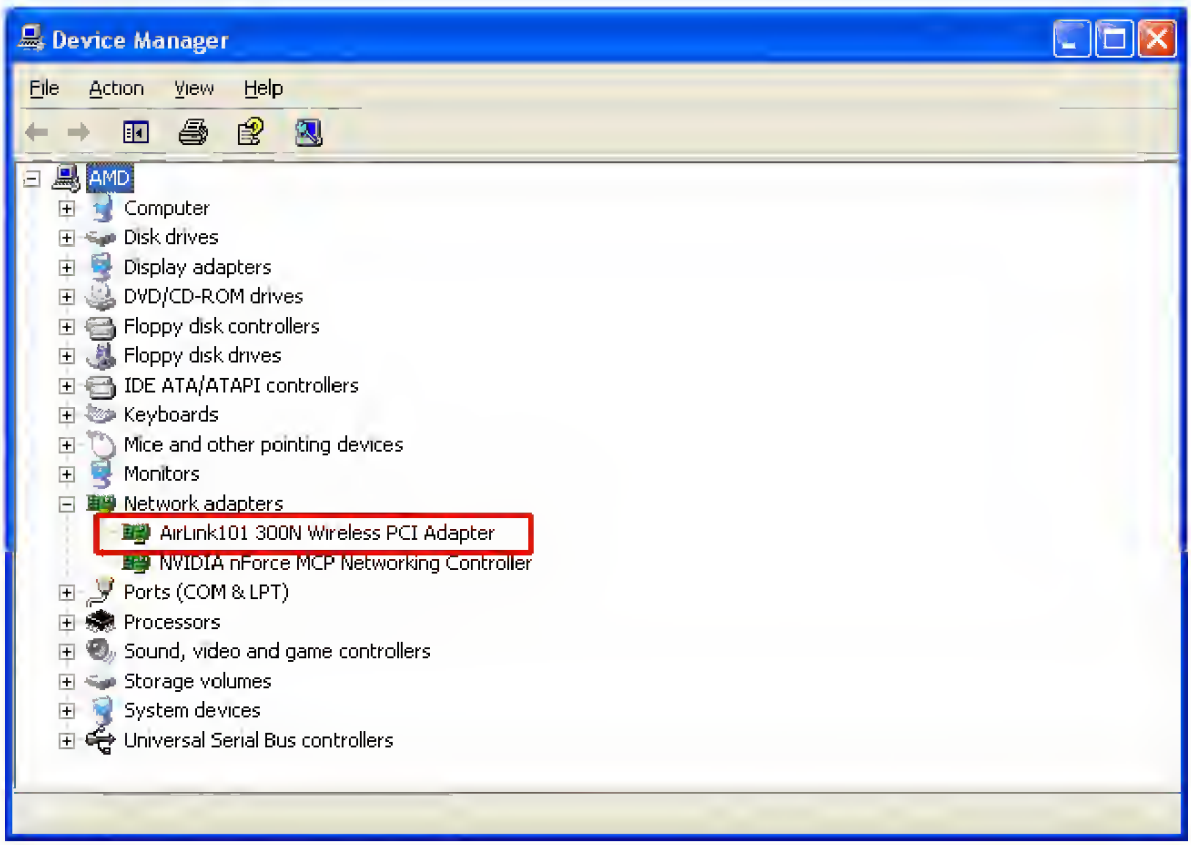


Step 3 Expand **Network adapters** from the list and verify that **AirLink101 300N Wireless PCI Adapter** is listed and no yellow question mark is beside it.



If **AirLink101 300N Wireless PCI Adapter** is not listed, or you see a yellow question mark beside it, you will need to reinstall the driver.

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3. Configuring the Adapter

This section describes how to connect your wireless adapter to a wireless network.

Note to Windows XP Users:

You must disable the Wireless Zero Configuration Utility in order to use the bundled Wireless Utility. Please follow the steps below to disable XP's wireless utility. Windows Vista users can skip the following instructions and go to **Step 1**

Double-click on the **Wireless Network Connection Icon** in the system tray and then click on **Properties** or **Advanced**.

When the new wireless network connection properties window appears, go to the **Wireless Networks** tab, uncheck the **"Use Windows to configure my wireless network settings"** check box and click **OK**.

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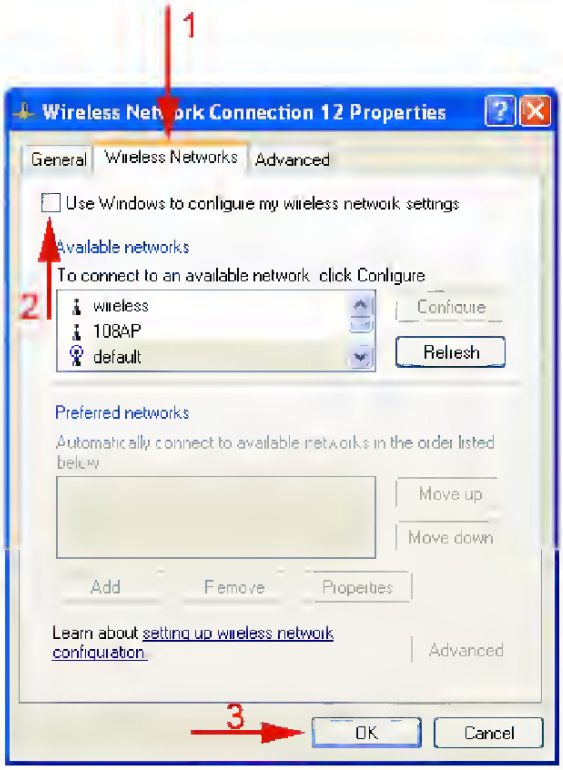

Step 1 To open the utility, double click on the Wireless Monitor icon in the system tray at the bottom right-hand corner of your screen.

Step 2 Go to the **AP List** tab, select the **SSID** (Network Name) of the wireless network you wish to connect to, and click **Connect**.

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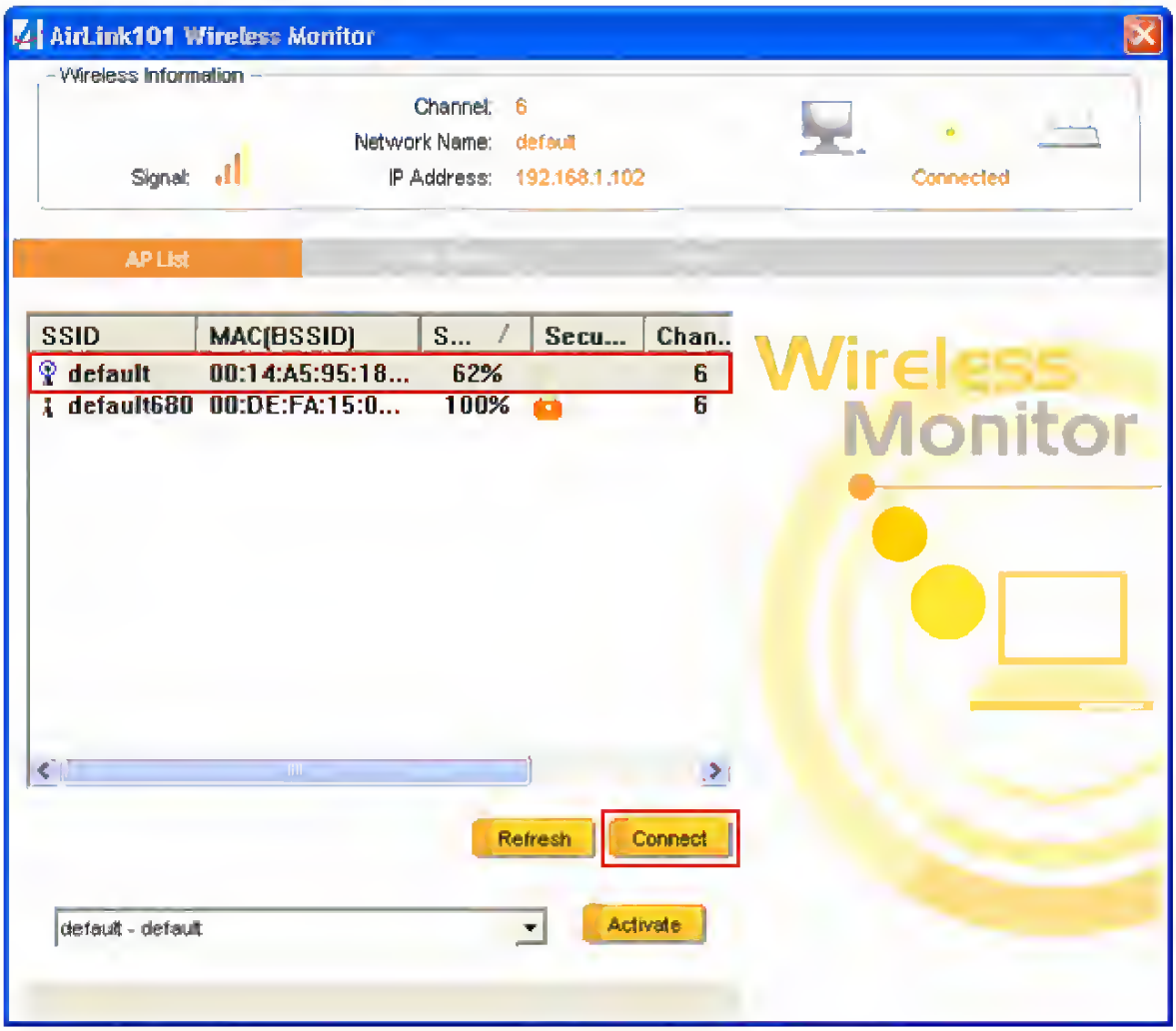

If the network you are attempting to connect to is configured for encryption, you will see an orange lock icon next to the network.

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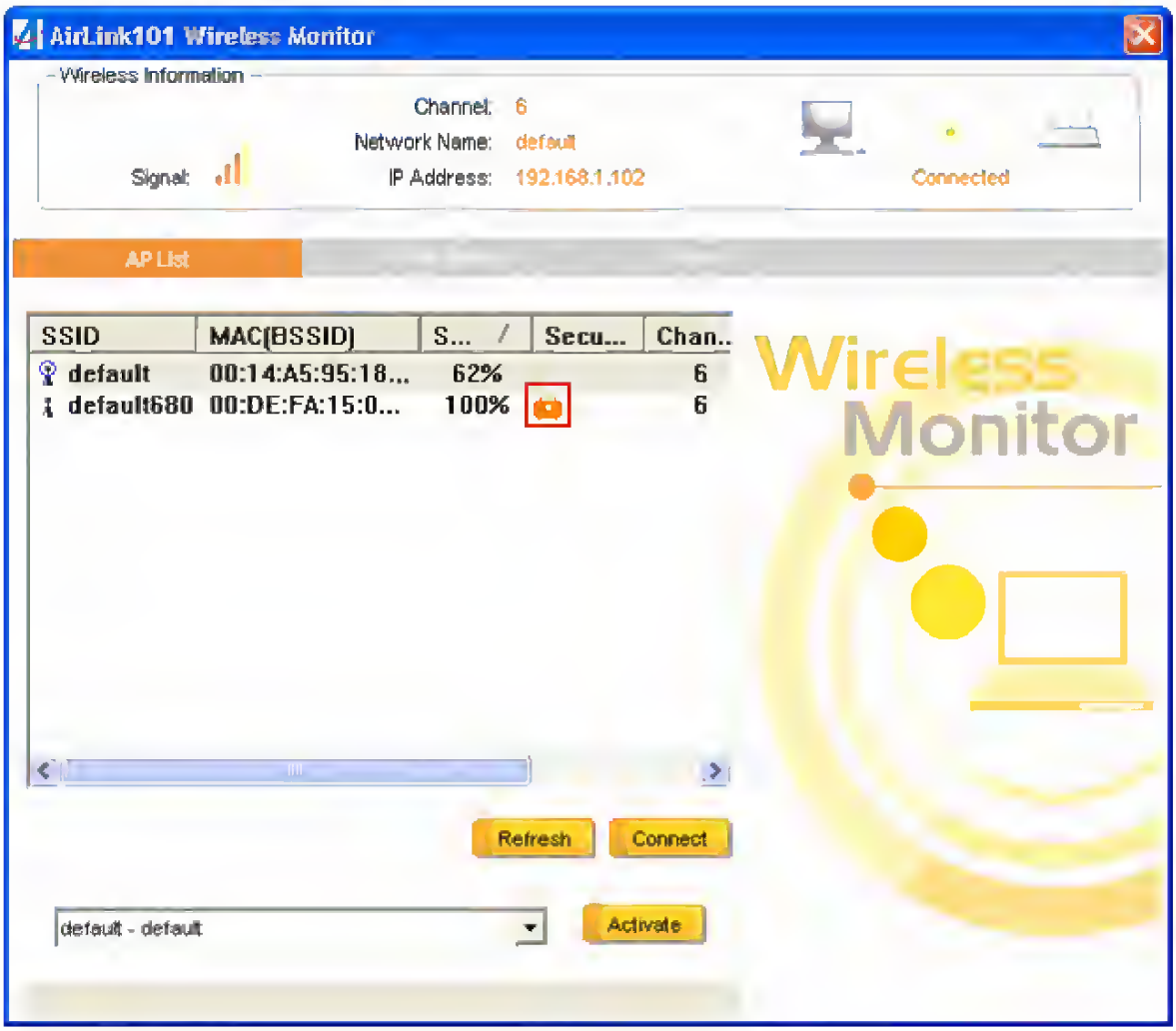
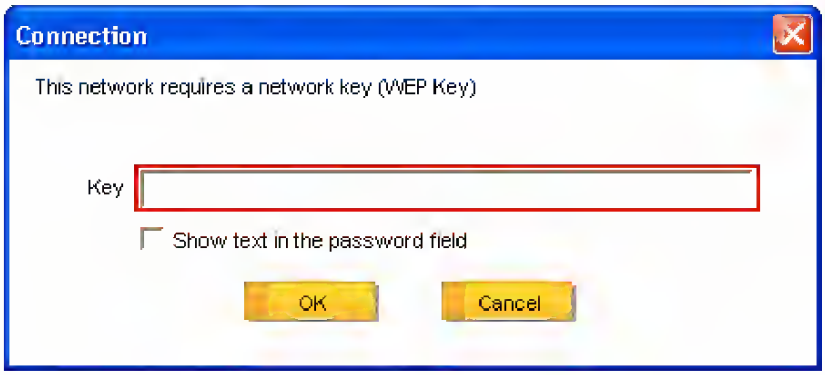


When you click on it and click connect, a box will pop up requesting the wireless encryption key for the router. Enter the encryption key into the box and click **OK**.



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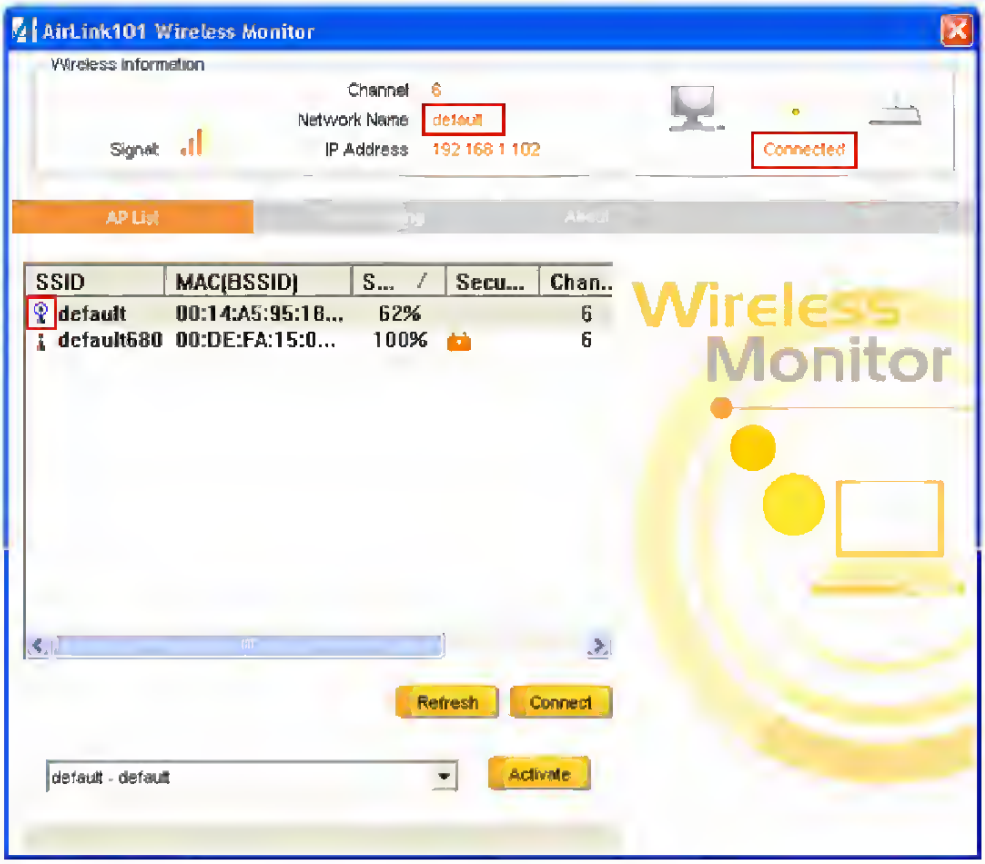
Step 3 You should now be connected. You should see "Connected" in the top, right hand corner, and there will be a blue circle around the antenna icon next to the network name.



Troubleshooting: If you are experiencing problems with the connection (unable to connect, low signal strength, slow connection speed, not working, unstable wireless connection) you will want to tune your router's signal by changing channels on the router or adjusting the antenna direction.

You do not need to change the channel on the card, it will automatically pick up the new channel after you reboot. The only channel that you need to change is the router's channel.

Your router has 11 different channels to choose from. Start with channel 1 and work your way up. Each time you change the channel on the router, make sure that you restart the wireless computer before trying to connect again. Keep going through the channels until you find one that gives you a stable connection.

For instructions on changing channels, refer to the documentation that came with your router.

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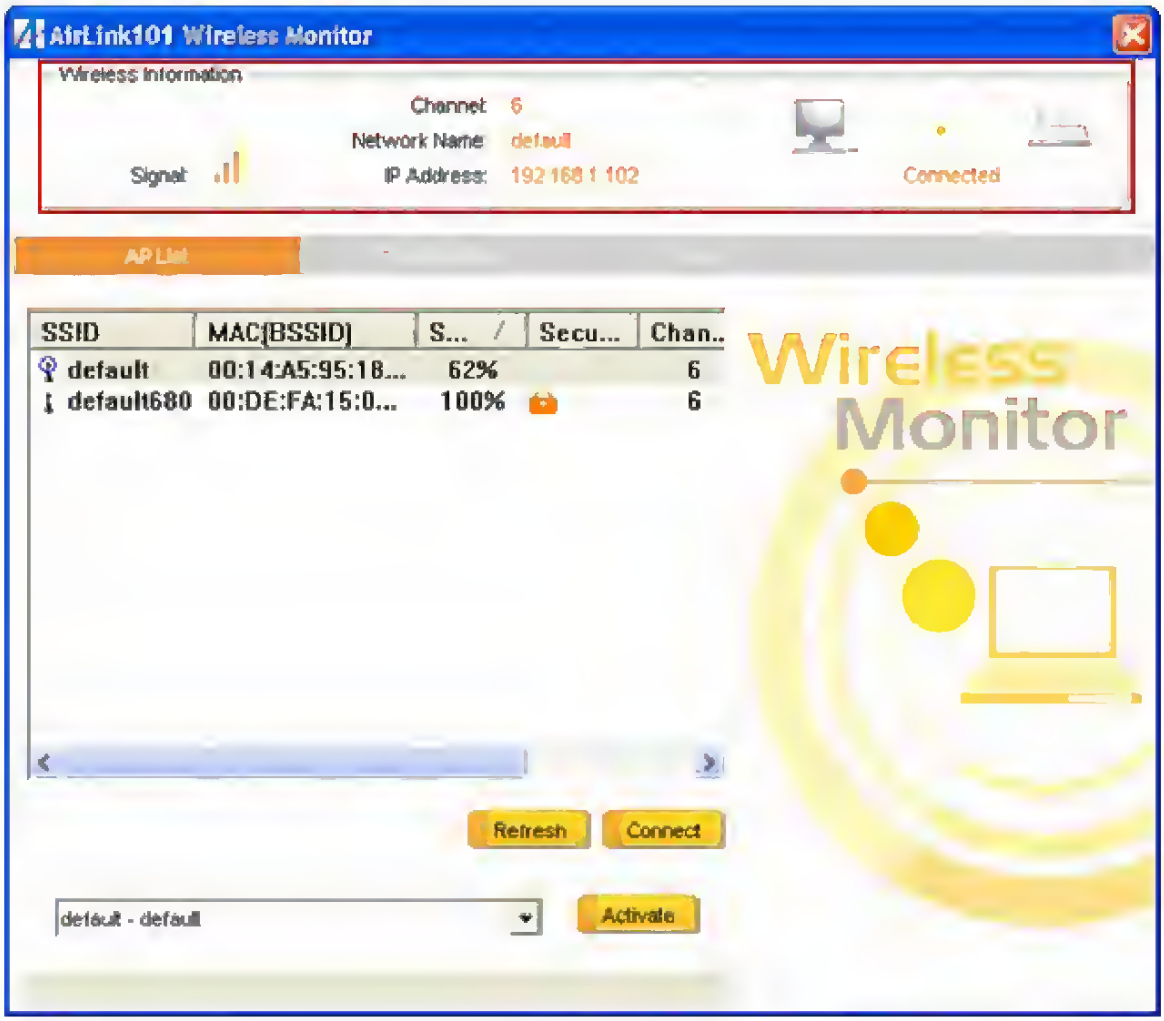
4. Wireless Monitor

This section describes the various functions of the Wireless Monitor that you can configure, including the settings of wireless encryption.

4.1 Wireless Information

The **Wireless Information** box at the top of the window provides you with the status of the current connection, including signal, network name (SSID), IP Address and router channel.



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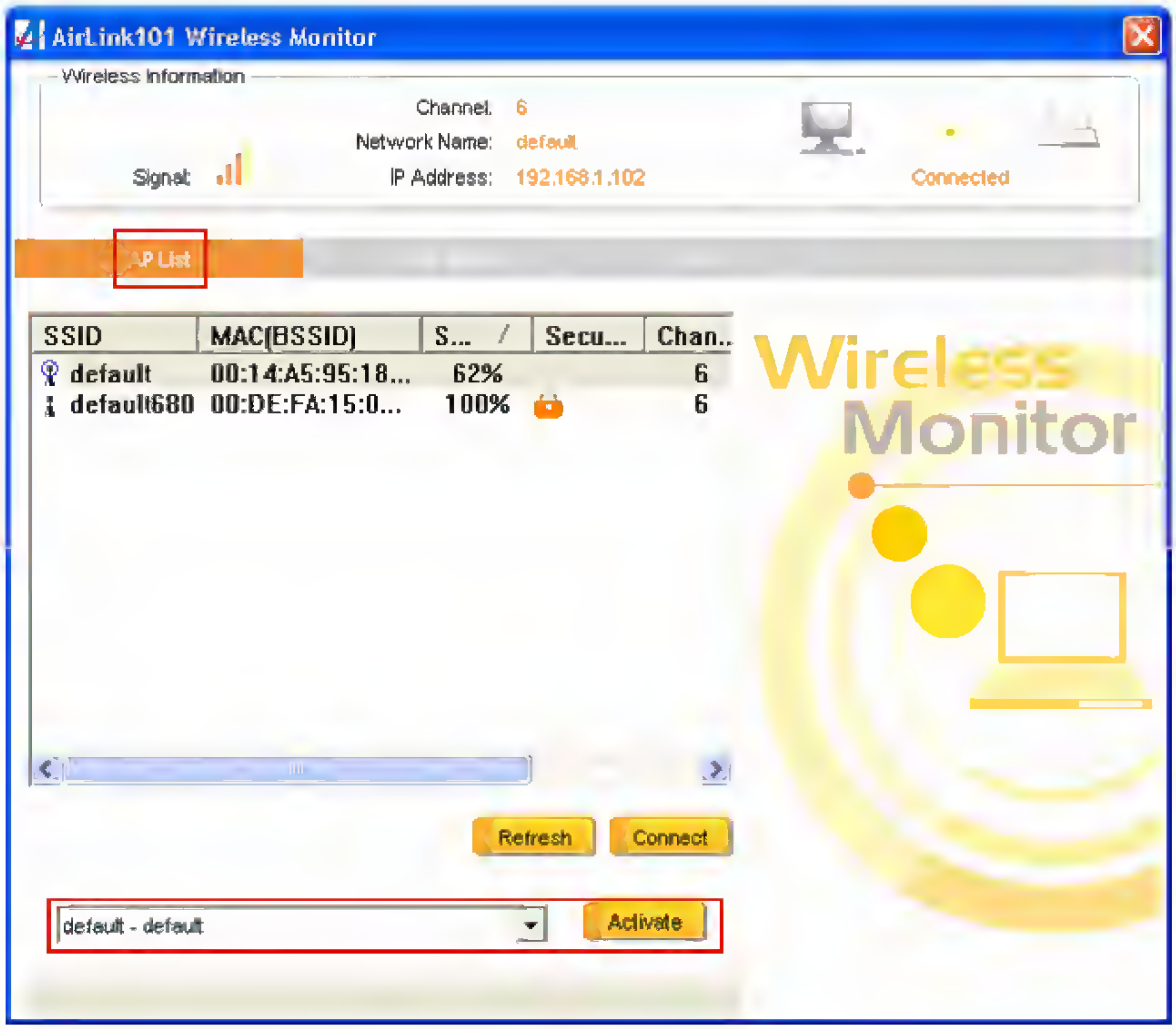
4.2 AP List

The **AP List** tab displays all the available wireless networks detected by the Wireless Adapter. Simply select the wireless network you wish to connect to and click **Connect**. If you have created multiple profiles, you can use the profile chooser at the bottom to select the specific profile you want to use. Then click **Activate** to enable that profile.



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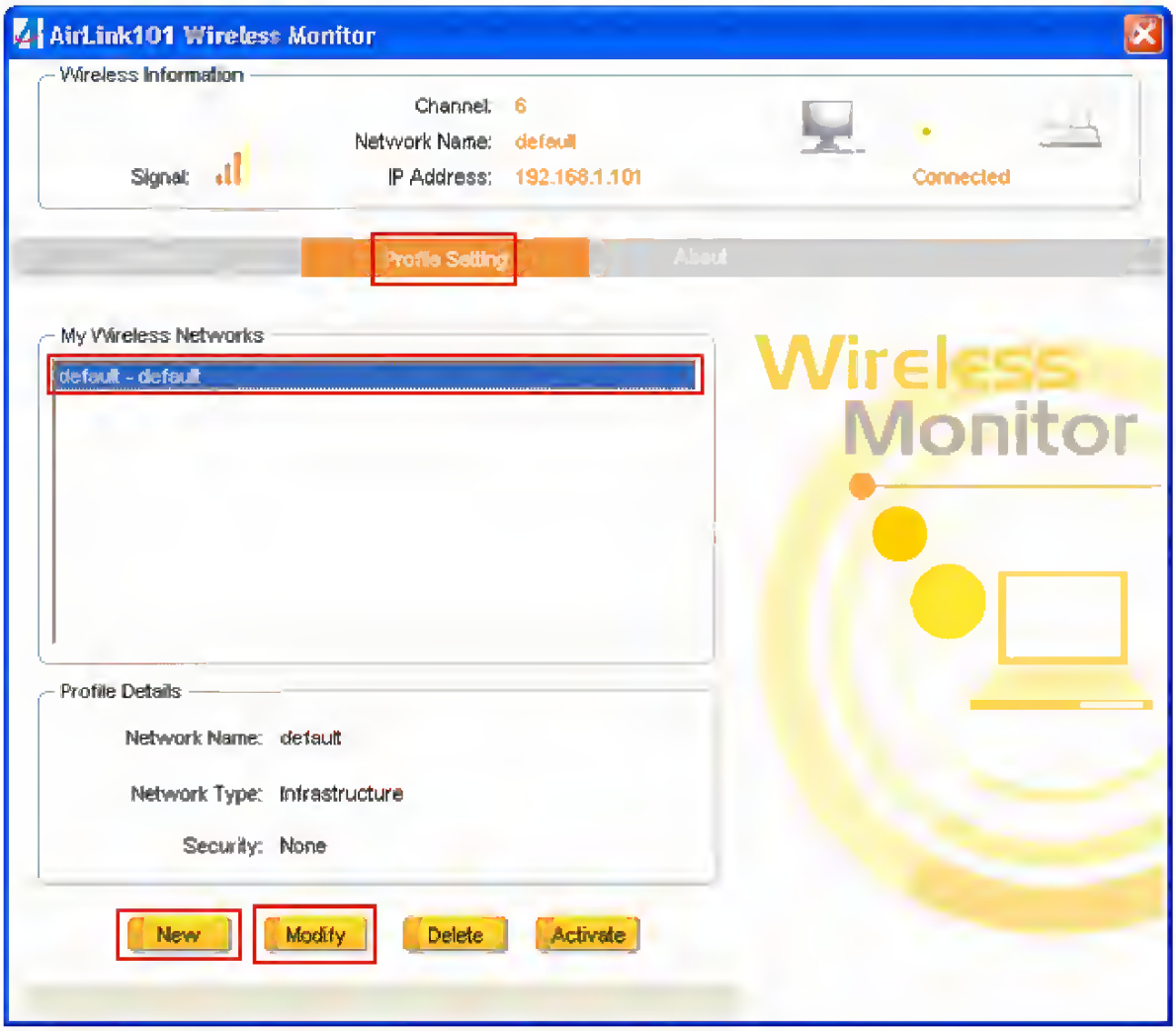
4.3 Profile Settings

This section provides instructions on using the **Profile Settings** section of the wireless monitor.



The **My Wireless Networks** box lists the different profiles you've created for the different networks that you use. Profiles are automatically created and added to this list when you connect to new networks. You can also manually add profiles.

To modify an existing profile, select that profile from the **My Wireless Networks** box and click on modify.

To create a new profile, click on **New**.

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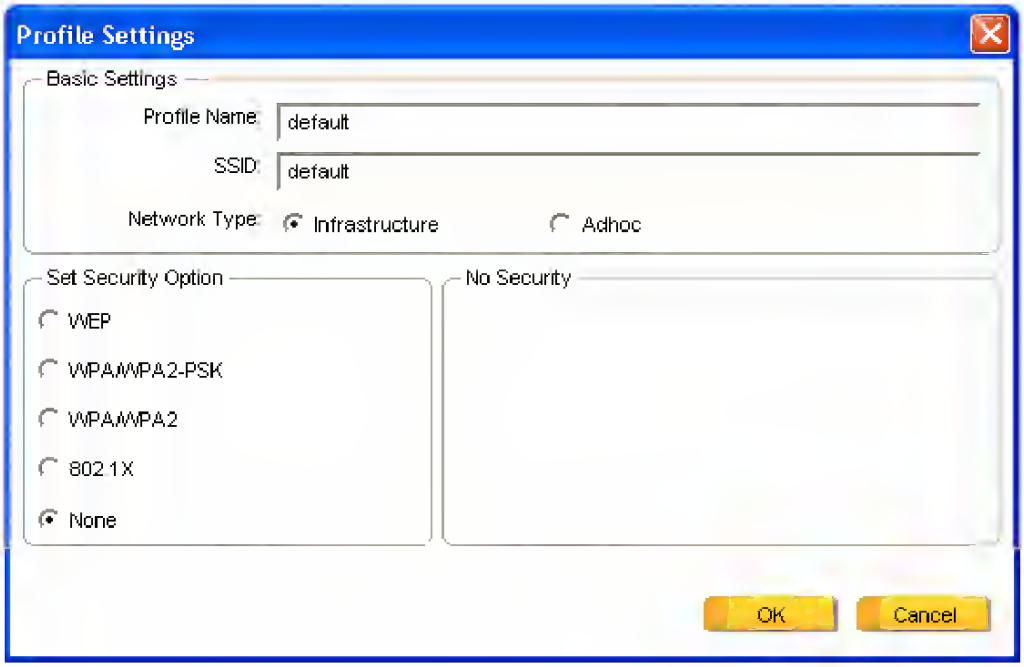
The **Profile Settings** box will appear allowing you to specify the settings for your new profile or change settings for your existing profile.



Once you are finished entering the settings, click **OK** to save the changes.

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4.4 Configuring Encryption

This section describes the different types of encryption available and how to configure them. In most cases, encryption will be automatically configured and all that will need to be entered is the key, as described in **Section 3 Step 2**. The only time you will need to manually configure the encryption settings is if you are creating a custom profile.

Click on **Profile Settings** then **New.**

The profile settings box will appear. This is where you will change your encryption settings. As you can see you have five different options to choose from.

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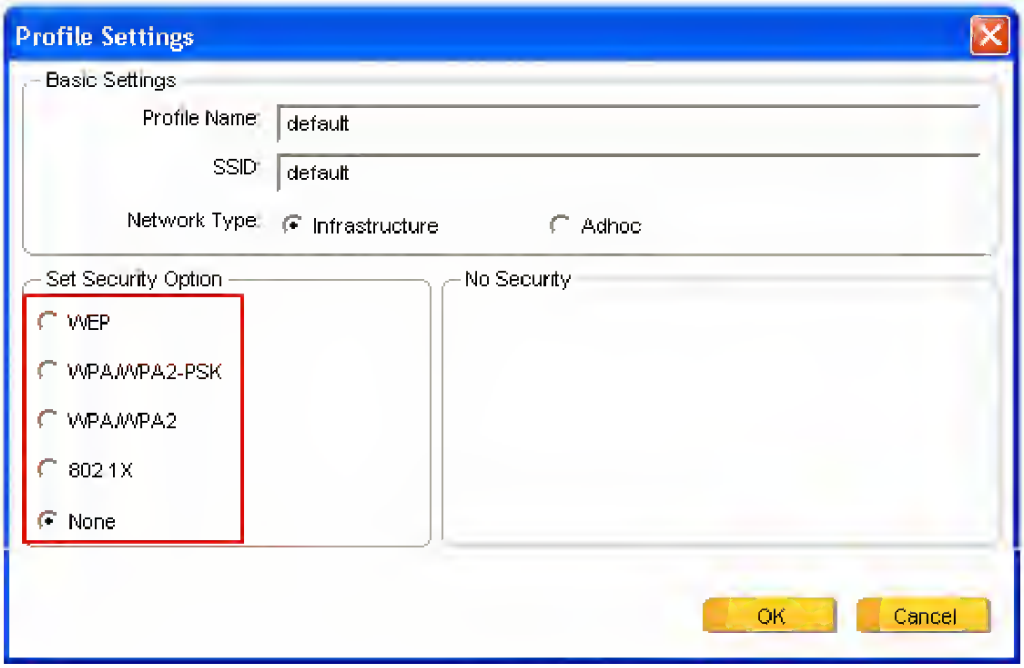

These three are meant for the home user:

None: No encryption in use
WEP: The most popular but least secure form of encryption
WPA/WPA2-PSK: The most secure and recommended level of encryption

The remaining two are for use in a corporate environment that utilizes authentication servers. If you do not know whether you have an authentication server, you probably don't and will want to stick with the three options above.

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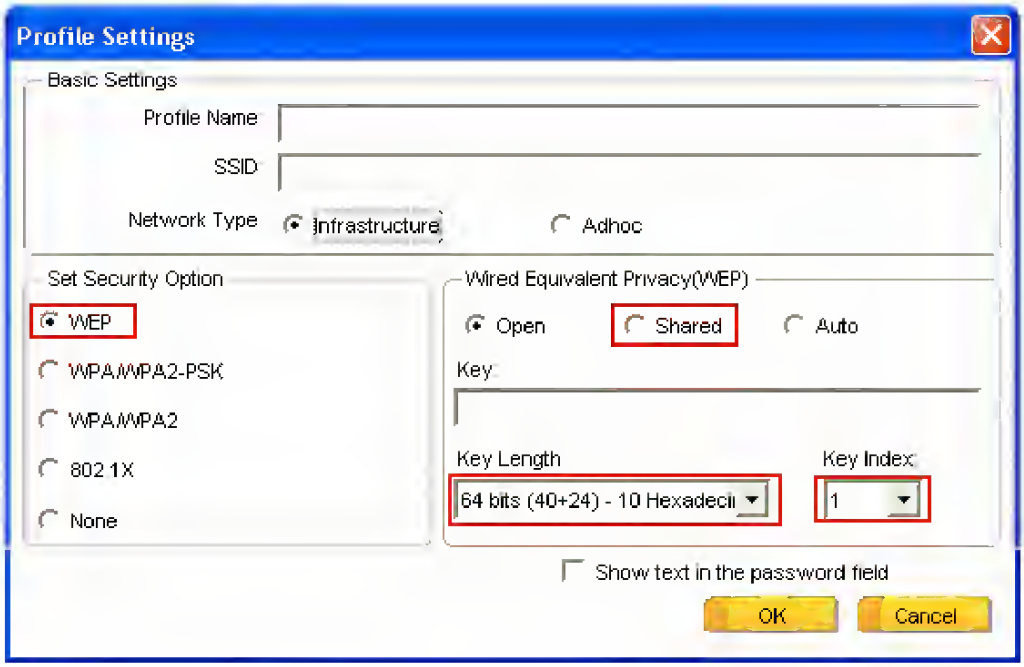
Configuring WEP encryption



Select **WEP** from the **Set Security Option** box.

Under **Wired Equivalent Privacy (WEP)**, select **Shared** or **Open**, depending on the router settings.

In the **Key** box, you need to type in the encryption key for the router. If you check the **Show text in the password field** box, your key will appear in the box as you are typing it instead of showing only asterisks. This is helpful as it allows you to double check the key before saving the changes.

Key Length will also be predetermined by the router. Refer to your routers settings to find out what you should select here.

Key Index is the key on the router that is currently in use. Refer to your routers settings to find out what you should choose.

Once you are done, click **OK** to save your settings.

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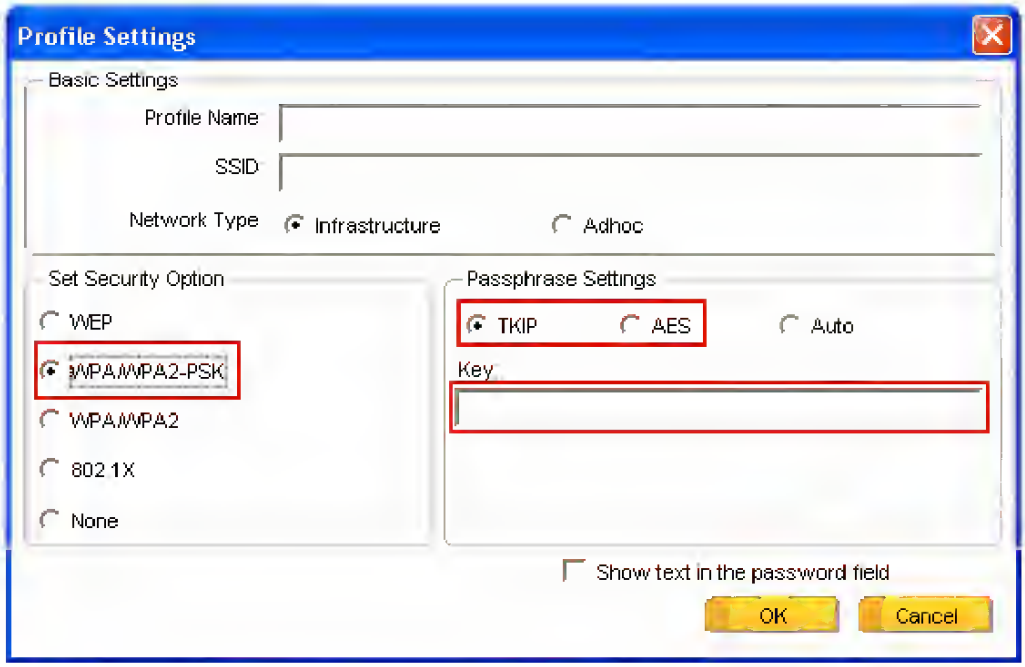
Configuring WPA/WPA2-PSK Encryption (for home users)



Select **WPA/WPA2-PSK** from the **Set Security Option** box.

Under **Passphrase Settings** select either **TKIP** or **AES** depending on the settings for your router.

Enter the encryption key into the **KEY** box.

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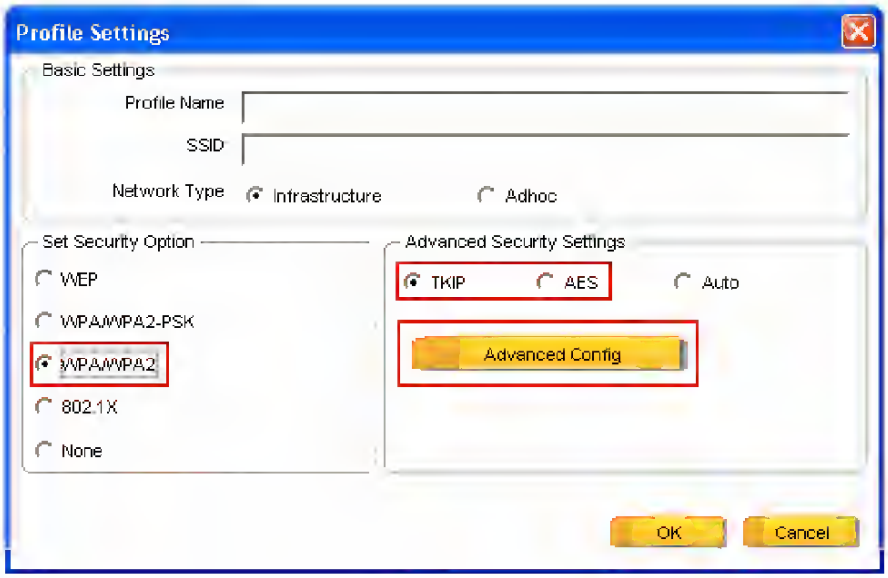
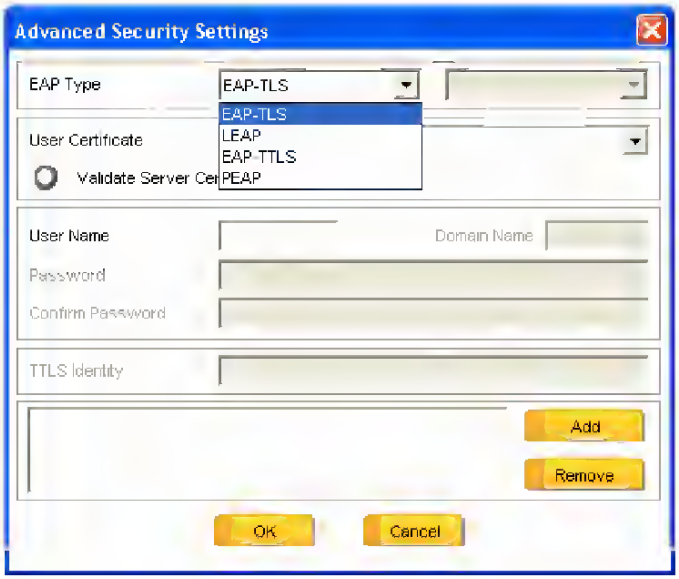
Configuring WPA/WPA2 Encryption (for corporate networks)



Select **WPA/WPA2** from the **Set Security Option** box.

Under **Advanced Security Settings** select either **TKIP** or **AES** depending on the settings for your router.

Click on **Advanced Config** to enter your authentication settings.



The adapter supports EAP-TLS, LEAP, EAP-TTLS, and PEAP authentication methods. Refer to your system administrator for information about what settings you should enter here.

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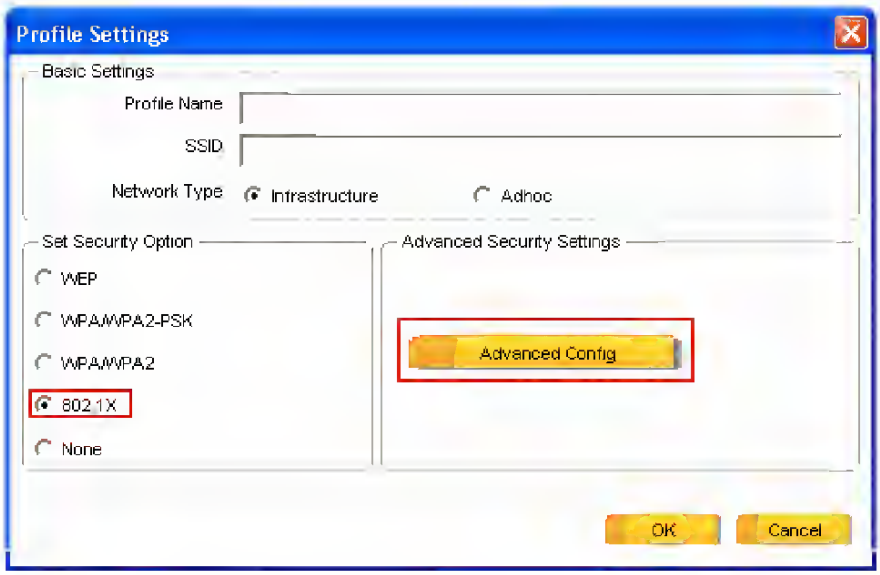
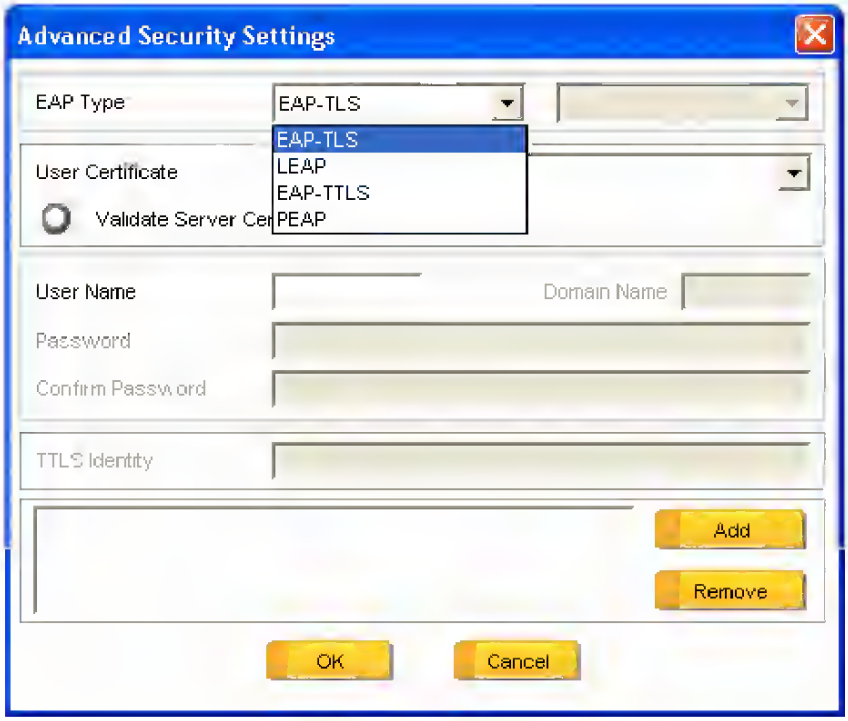
Configuring 802.1x authentication (for corporate networks)



Select **802.1x** from the **Set Security Option** box.

Click on **Advanced Config** to enter your authentication settings.



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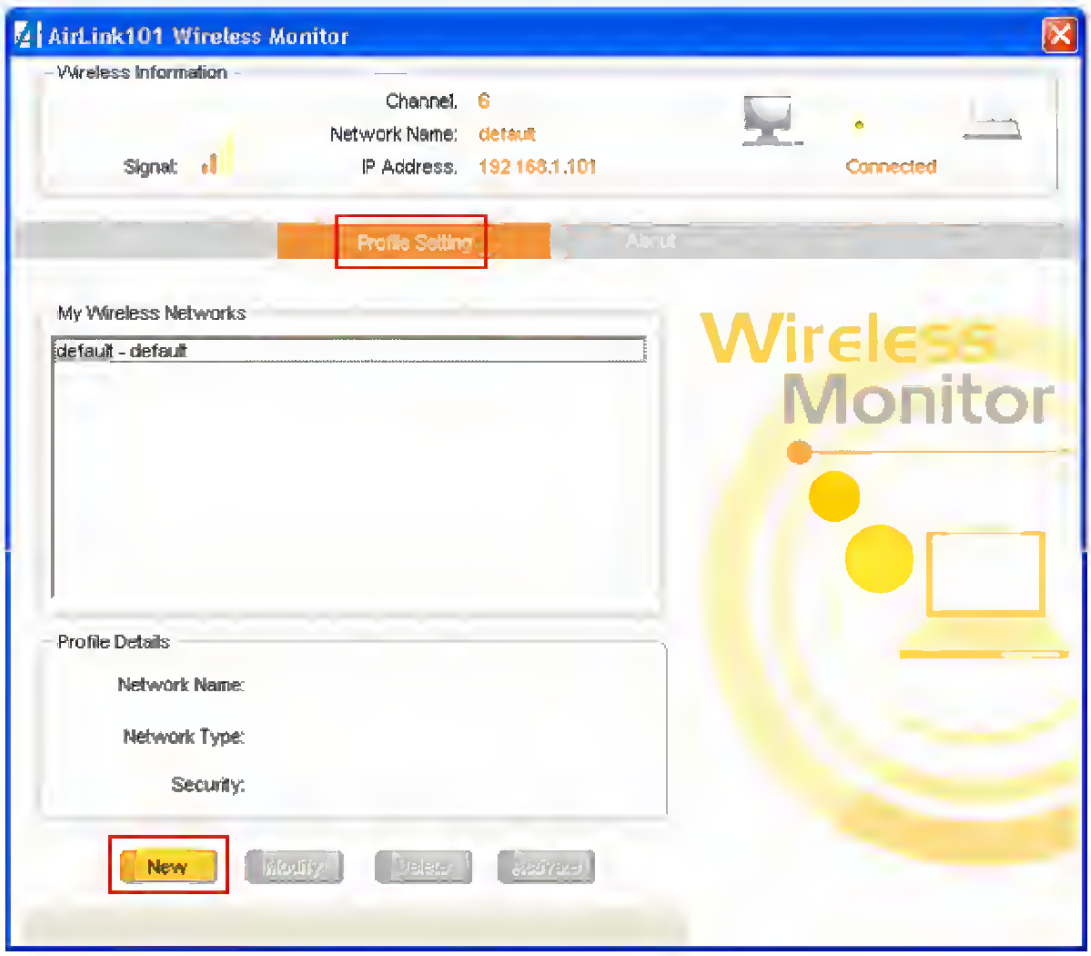
The adapter supports EAP-TLS, LEAP, EAP-TTLS, and PEAP authentication methods. Refer to your system administrator for information about what settings you should enter here.

4.5 Ad-hoc and Peer-to-Peer Wireless Networks

Ad-hoc networking is used when you want to connect two or more computers together but you don't have a router.

In ad-hoc mode, you lose a lot of the features that come with a router. Instead of being able to operate at 300Mbps, the maximum connection speed is significantly less at 11Mbps. WEP encryption is the only security available in ad-hoc mode.

To set up ad-hoc mode, you will need to create a new profile.



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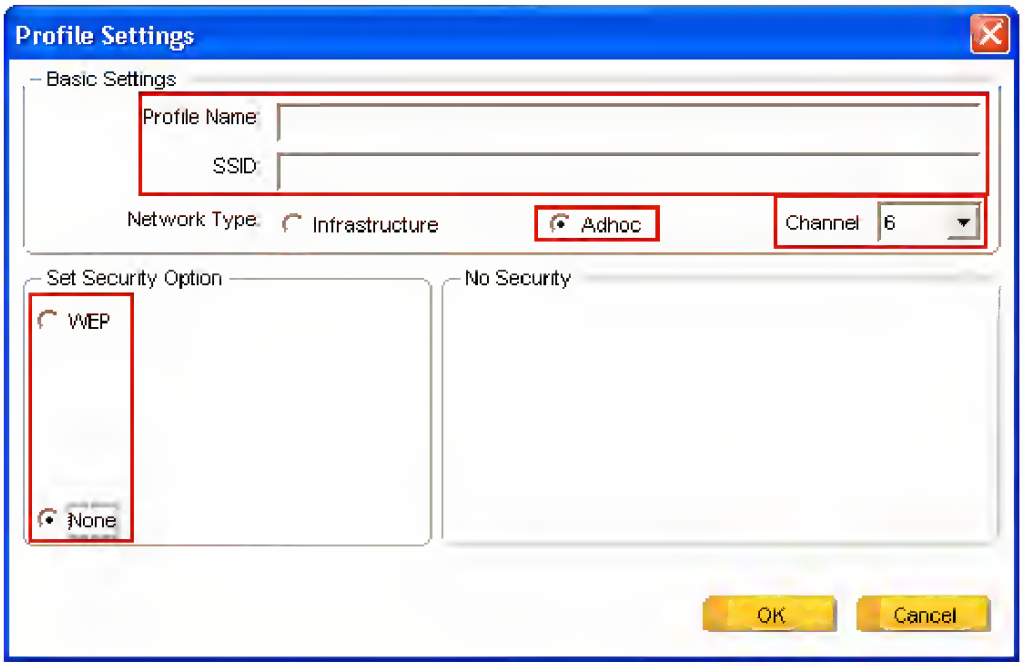
Open the **Wireless Monitor.**

Click on **Profile Setting**, then click on **New**.

The profile settings box will appear.



First change the network type to **Adhoc**. (Infrastructure is for when you are using a router).

Enter a profile name into the **Profile Name** box so that you can identify the profile.

Type in a network name (SSID) into the **SSID** box

Select your desired **Channel**

You can also choose between no security or WEP security. If you choose WEP security, you can follow the instructions in the **Configuring Encryption** section of the manual.

Click **OK** to save the profile.

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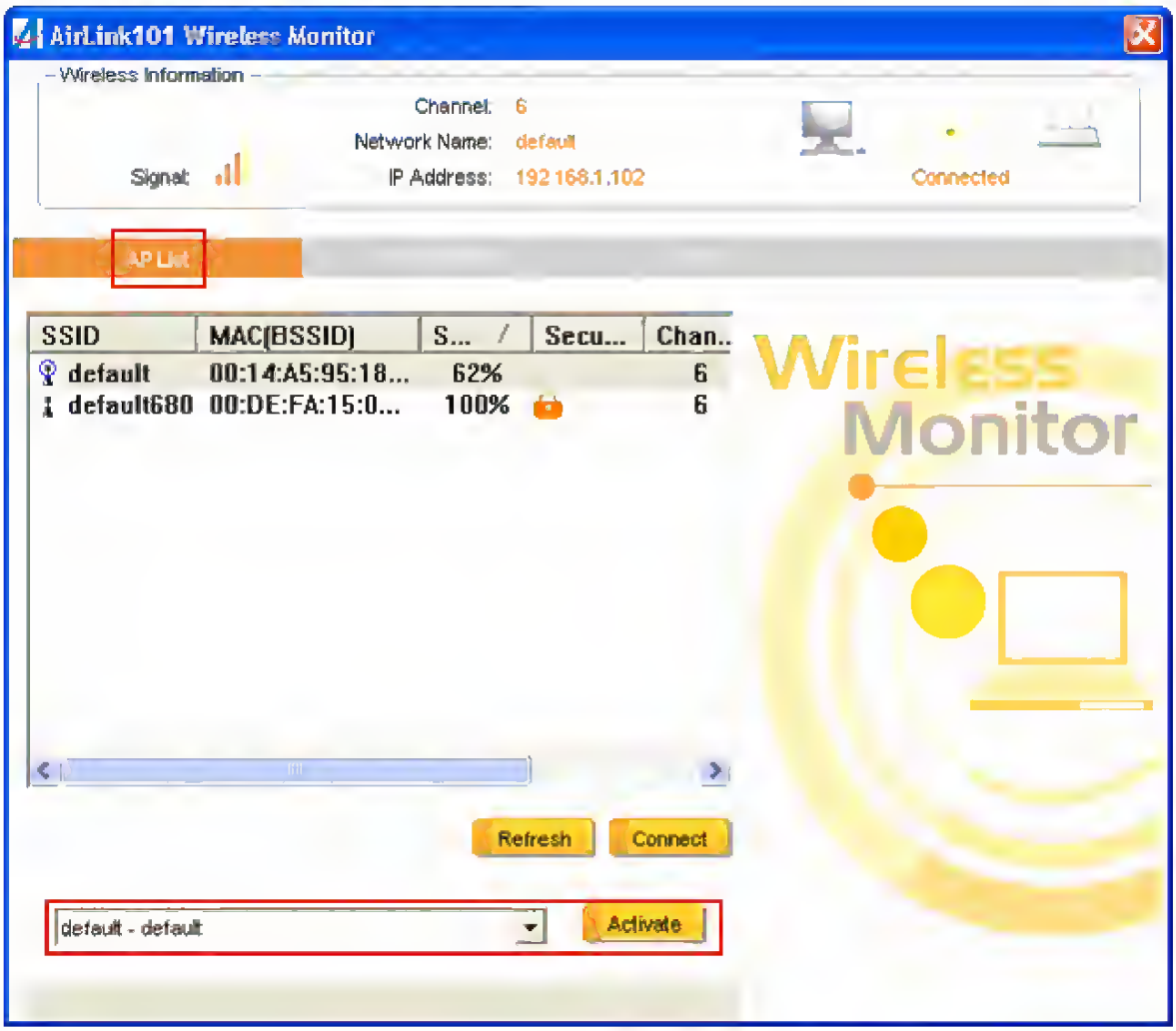
Once that is done, click on the **AP List**.



Select your new profile from the profile chooser and click **Activate** to enable the profile.

You will need to configure all other computers that you are planning on connecting to your ad-hoc network with the same settings that you input on this screen. Every computer has to be set up exactly the same. If any of the settings are different, the network will not function.

Troubleshooting: If you are having trouble connecting, if the connection is slow, or if it is unstable, you will want to try changing channels. Start with channel 1 and work your way up until you find a channel that gives you a stable connection. Each time you change the channel, save the settings, then reboot the computer. Also make sure that you do this on every ad-hoc machine so that they will all be set to the same channel.

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4.6 About

The About tab shows the Utility, Driver, and Firmware version as well as the MAC address of the adapter.

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Appendix A – Specifications

Frequency Band
- 2.4~2.5 GHz

Standards
- IEEE 802.11b / 802.11g
- Draft 802.11n

Interface
- 32bit PCI

Antenna type
- 3 external antennas

Security
- WPA-PSK (TKIP)
- WPA2-PSK (AES)
- WEP 64/128 bit
- WPA/WPA2
- 802.1x

System Requirements
- 600 MHz processor or better
- 128 MB RAM
- Available PCI slot

OS Compatibility
- Windows 2000/XP/Vista

Weight
- 354g (antenna included)

Dimensions
- 234 x 122 x 23mm (L x W x H)

Temperature
- Operating: 0ºC to 60ºC
- Storage: -20ºC to 80ºC

Humidity
- Operating: 10% to 80% Non-Condensing
- Storage: 5% to 90% Non-Condensing

Warranty
- Limited 1-year warranty

Safety Approvals
- FCC, CE, IC

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Appendix B – Information

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

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European Union Notice:

Radio products with the CE marking comply with the R&TTE Directive (1999/5/EC), the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

- EN 60950 Product Safety
- EN 300 328 Technical requirement for radio equipment
- EN 301 489-1/-17 General EMC requirements for radio equipment

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Technical Support

E-mail: support@airlink101.com

Toll Free: 1-888-746-3238

Web Site: www.airlink101.com

*Theoretical maximum wireless signal rate derived from IEEE 802.11g standard and IEEE 802.11n draft specification version 1.0. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, mix of wireless products used, radio frequency interference (e.g., cordless telephones and microwaves) as well as network overhead lower actual data throughput rate. Specifications are subject to change without notice. All products and trademarks are the property of their respective owners. Copyright ©2006 AirLink101™

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